

Materials Specification – 21 for CONTROLLED LOW STRENGTH BACKFILL MATERIAL (CLSM)

1. CLSM MIX SUBMITTAL:

A minimum of two days prior to beginning CLSM work, CLSM mix designs shall be submitted to Denver Water for approval. No changes shall be made in the amounts or sources of the approved mix ingredients without the written approval of Denver Water. Production inspection and field testing of the approved mix may be made by Denver Water.

2. CLSM PRODUCTS:

A. Cementitious Materials:

- 1) Cement

Cement used shall be Type II Portland cement that shall conform to the requirements of ASTM C150.

- 2) Fly Ash

The fly ash shall conform to ASTM C618; fly ash may be either Class C or Class F.

B. Aggregates:

- 1) Fine Aggregate

Fine aggregate shall conform to the grading and quality requirements of ASTM C33.

- 2) Coarse Aggregate

Coarse aggregate shall conform to the grading and quality requirements of ASTM C33 for Size No. 467, No. 57 or No. 67.

C. Water:

The batch mixing water and mixer washout water shall conform to the requirements of ASTM C94.

D. Admixtures:

Chemical admixtures that do not contain calcium chloride and that conform to ASTM C494 for concrete may be used in the CLSM mix. Chemical admixtures shall be compatible with the cement and other admixtures in the batch.

3. CLSM PROPORTIONS:

CLSM shall have a minimum 28 day compressive strength of 100 psi and a maximum 28 day compressive strength of 200 psi when molded and cured in compliance with ASTM D4832.

CLSM shall be air entrained to a total air content of approximately 5%. The minimum slump shall be 6-inches and the maximum slump shall be 8-inches when tested in accordance with ASTM C143.

Fine aggregate shall be between 50% and 60% by volume of the total aggregates in the CLSM mix.

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